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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,467	10/28/2003	John R. Sciandra	23368	5616

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EXAMINER	
NEURAUTER, GEORGE C	

ART UNIT	PAPER NUMBER
2143	

DATE MAILED: 08/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/695,467	SCIANDRA ET AL.	
	Examiner	Art Unit	
	George C. Neurauter, Jr.	2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 October 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-16 are currently presented and have been examined.

Specification

The abstract of the disclosure is objected to because the abstract exceeds 150 words as required by 37 CFR 1.72(b). Correction is required. See MPEP § 608.01(b).

A suggested corrected abstract is as follows:

"A Virtual Access Core (VAC) manages and controls access to virtual machines. A Virtual Instruction Routine (VIR) protocol is used by all components of the system to pass instructions and information about a Virtual Session. The VAC issues commands in the VIR protocol language causing virtual machines to start and stop. A VIR host that hosts virtual machines responds to VAC commands. Web clients access the system via links, which a web server uses to send access requests to the VAC. The VAC responds by searching through process memory and database tables for information about free slots on a plurality of VIR hosts grouped into a Host Array. When one or more free slots have been identified, the VAC issues VIR Protocol commands instructing one or more VIR Hosts to load and start specific virtual machines in Specific Slots."

Drawings

The drawings are objected to because, in view of paragraph 0030 on pages 9 and 10 of the specification and Figure 3, the elements labeled "VIR Host 1" and "VIR Host n..." should be swapped. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office

action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 15 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 15 and 16 recite the limitation "the server computer". There is insufficient antecedent basis for this limitation in the claim.

In order to avoid piecemeal examination and to give the Applicant a better appreciation for relevant prior art, the Examiner will assume that the server computer is the host server. See, e.g., *Ex parte Ionescu*, 222 USPQ 537 (Bd. App. 1984) and MPEP 2173.06.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 8-9, and 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent Application Publication 2002/0103882 A1 to Johnston et al.

Regarding claim 1, Johnston discloses a method for allocating virtual machines among clients on a network, comprising the steps of:

(a) providing one or more host servers (referred to within the reference as "DLU"; Figure 2, elements 210, 212, and 214; see also paragraphs 0054-0064), each host server having a plurality of virtual machines available for allocation; (paragraph 0055, specifically "One method of providing multiple virtual machines 302-306 on a DLU...Using VMWare, a script can be used to launch multiple virtual machines...[T]he virtual machines 302-306 that are launched on the DLU includes virtualized functionality...to provide a virtual environment that simulates networked machines...")

(b) receiving client requests for allocation of virtual machines (paragraph 0036, specifically "A web server 208 is also depicted in Fig. 2 that receives requests from a client..."; paragraph 0042, specifically "In step 404, as a result of the

clients selection from the provided HTML page, the invoked link requests a virtual environment from the DLM 208"; paragraph 0065, specifically "The DLM 208 receives requests from a web form or other user interface..."); and

(c) assigning virtual machines to clients, the virtual machines being distributed among the host servers according to a load-balancing algorithm. (paragraph 0040, specifically "In step 402, a client (or student) 202 connects to the web server 208 and selects an exercise to perform. In particular, the web server 208 can serve an HTML page identifying a variety of exercises or software environments for access by the client 202."; paragraph 0044, specifically "The DLM 208 maintains a list of available DLUs 210-214 along with their individual capabilities such as memory, CPU speed and type, number of CPUs, etc. This list can be updated...periodically...The DLM 208, in step 408 identifies an appropriate DLU from among the available DLUs 210-214 to service the request from the web server."; paragraph 0045, specifically "...[t]he DLM 208 selects, in step 412, that DLU to serve the requests and tells the DLU to start the virtual machines appropriate for the selected exercise"; paragraph 0064, specifically "The DLM can also ask the DLUs for status every m seconds in order for the DLUs to be alerted to send their status. The message contains the DLU name..., number

of VMs running on the DLU, and their status (e.g., free, busy, down)...[T]he DLU can also send out one or more message including information about the DLUs features...so that the DLM can choose the DLU...best suited for a particular task during a session...").

Regarding claim 2, Johnston discloses the method of claim 1 wherein the step of receiving client requests further includes receiving the requests at a single IP address. (paragraph 0049, specifically "[T]he DLM...becomes responsible for receiving communications from all clients 202 for all the different virtual machines...Port redirection can be accomplished on...the DLM...One such port redirection...allows one IP address...to receive communication packets destined for multiple virtual connections...")

Regarding claim 3, Johnston discloses the method of claim 2 wherein the step of assigning virtual machines further includes assigning each virtual machine to only one client. (paragraph 0035, specifically "Each of the DLUs 210-214 provide virtual environments used by a client 202...[E]ach DLU can facilitate the connection of one student at any moment in time")

Claims 8-9 are also rejected since these claims recite a computer program product that contain substantially the same limitations as recited in claims 1 and 2 respectively.

Regarding claim 14, Johnston discloses a system for allocating virtual machines among clients on a network, comprising:

(a) a plurality of client computers connected to the network ("Internet" or, alternatively, "training network"); (Figure 2, elements 202 and 204; paragraph 0032, specifically "A client 202 is shown in Fig. 2 who utilizes the Internet 204 for example to access the training network 220. While only one client 202 is depicted, multiple clients, or users, can simultaneously access the training network.")

(b) one or more host servers ("DLU"; Figure 2, elements 210, 212, and 214; see also paragraphs 0054-0064), each server having a plurality of virtual machines available for allocation (paragraph 0055, specifically "One method of providing multiple virtual machines 302-306 on a DLU...Using VMWare, a script can be used to launch multiple virtual machines...[T]he virtual machines 302-306 that are launched on the DLU includes virtualized functionality...to provide a virtual environment that simulates networked machines..."); and

(c) a processor connecting the network and the host servers ("DLM"; Figure 2, element 208), said processor including

(i) a port for receiving client requests for allocation of virtual machines and for providing connectivity between clients

and allocated virtual machines, (paragraph 0036, specifically "A web server 208 is also depicted in Fig. 2 that receives requests from a client..."; paragraph 0042, specifically "In step 404, as a result of the clients selection from the provided HTML page, the invoked link requests a virtual environment from the DLM 208"; paragraph 0049, specifically "[T]he DLM...becomes responsible for receiving communications from all clients 202 for all the different virtual machines..."; paragraph 0065, specifically "The DLM 208 receives requests from a web form or other user interface...")

(ii) an output connected to the host servers (paragraph 0034, specifically "The DLM is connected to the DLUs 210-214 via a network 222"), and

(iii) means for distributing the allocated virtual machines among the host servers according to a load-balancing algorithm. (paragraph 0040, specifically "In step 402, a client (or student) 202 connects to the web server 208 and selects an exercise to perform. In particular, the web server 208 can serve an HTML page identifying a variety of exercises or software environments for access by the client 202."; paragraph 0044, specifically "The DLM 208 maintains a list of available DLUs 210-214 along with their individual capabilities such as memory, CPU speed and type, number of CPUs, etc. This list can be

updated...periodically...The DLM 208, in step 408 identifies an appropriate DLU from among the available DLUs 210-214 to service the request from the web server."; paragraph 0045, specifically "...[t]he DLM 208 selects, in step 412, that DLU to serve the requests and tells the DLU to start the virtual machines appropriate for the selected exercise"; paragraph 0064, specifically "The DLM can also ask the DLUs for status every m seconds in order for the DLUs to be alerted to send their status. The message contains the DLU name..., number of VMs running on the DLU, and their status (e.g., free, busy, down)...[T]he DLU can also send out one or more message including information about the DLUs features...so that the DLM can choose the DLU...best suited for a particular task during a session...")

Regarding claim 15, Johnston discloses the system of claim 14, wherein the server computer includes a directory containing a copy of the virtual machines that have been assigned to the client computer. (paragraph 0046, specifically "...[T]he selected DLU receives the instruction from the DLM 203 and proceeds to launch one or more virtual machines...any changes a student makes to a virtual machine is stored locally on the DLU during the training session but are discarded when the session is over."; paragraph 0070, "In the instance in which a client

202 has available a number of different training sessions each having their own particular environments for different virtual machines...all the different possible operating environments on each DLU [are stored].")

Regarding claim 16, Johnston discloses the system of claim 14, wherein the server computer includes a plurality of directories, each directory containing a copy of the virtual machines that have been assigned to a client computer and each client computer having access only to that directory. (paragraph 0032, specifically "A client 202 is shown in Fig. 2 who utilizes the Internet 204 for example to access the training network 220. While only one client 202 is depicted, multiple clients, or users, can simultaneously access the training network."; paragraph 0046, specifically "...[T]he selected DLU receives the instruction from the DLM 203 and proceeds to launch one or more virtual machines...any changes a student makes to a virtual machine is stored locally on the DLU during the training session but are discarded when the session is over."; paragraph 0070, "In the instance in which a client 202 has available a number of different training sessions each having their own particular environments for different virtual machines...all the different possible operating environments on each DLU [are stored].")

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in

order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 4-7 and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnston in view of US Patent 5 291 597 A to Shorter et al.

Regarding claim 4, Johnston discloses the method of claim 3.

Johnston does not expressly disclose further comprising the step of associating each client with a unique session identifier, however, Johnston does disclose as shown above regarding claim 3 each virtual machine is assigned to only one client.

Shorter discloses associating each client ("terminal" or, alternatively, "Intelligent Work Station" ["IWS"]) with a unique session identifier ("LU name"). (column 3, lines 17-22 ["The control function of an LU is resource allocation. Programs ask one for access to a resource. Sessions which carry messages between LUs or programs running on LUs are considered shared resources. A session is divided into a plurality of serially executed conversations."; column 9, lines 6-20, specifically "For example, when an APPC ALLOCATE verb is received that originated from outside the VM operating system, VTAM will

determine if there is a Logical Unit active that corresponds to the LU name specified in the ALLOCATE. AVS will have previously told VTAM that it will handle all traffic for particular LU names. VTAM will find that AVS has defined an LU that corresponds to the LU name in the ALLOCATE verb and pass the ALLOCATE verb to AVS...Included in the ALLOCATE is a User ID, the identification of the user that the allocate was submitted in behalf of..."; column 10, specifically lines ["...the ALLOCATE verb including the following parameters...LU name = LU 1...USERID = DICKC...LU NAME = VMO1...USERIS = DICKC..."])

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of these references since Shorter discloses that associating a client with a unique session identifier allows for permanent association of the client with a virtual machine as long as the session between the client and the virtual machine is active (column 3, lines 55-64) and to enable allocation of virtual machines to clients for a communication session (column 9, lines 22-29). In view of these specific advantages and that the references are directed to assigning virtual machines to clients, one of ordinary skill would have been motivated to combine these references and would have considered them to be analogous to one another based on their related fields of

endeavor, which would lead one of ordinary skill to reasonably expect a successful combination of the teachings.

Regarding claim 5, Johnston and Shorter disclose the method of claim 4.

Johnston discloses the method further comprising the step of maintaining client access to its assigned virtual machines for the duration of the session. (paragraph 0050, specifically "[T]he client 202 is connected to the virtual machines in the virtual environment on the DLU and can start the training session..."; paragraph 0053, specifically "Finally...a client...either disconnects or runs out of time. Either of these events are detected by the DLM 208 with instructs the DLU to close down all virtual machines associated with the current training session..."; paragraph 0074, specifically "[A] client 202 could save the results during the middle of a training session and return to an exercise in progress at some later time. In this embodiment, of course, the disk servers would be configured to store client data in a manner that could be identified by the DLM 208 in order to correctly identify a returning user and their saved work product.")

Regarding claim 6, Johnston and Shorter disclose the method of claim 5.

Johnston discloses the method further comprising the step of monitoring the network for receipt of data from additional clients. (paragraph 0032, specifically "A client 202 is shown in Fig. 2 who utilizes the Internet 204 for example to access the training network 220. While only one client 202 is depicted, multiple clients, or users, can simultaneously access the training network."; paragraph 0036, specifically "A web server 208 is also depicted in Fig. 2 that receives requests from a client...")

Regarding claim 7, Johnston and Shorter disclose the method of claim 6.

Johnston discloses the method wherein the step of assigning virtual machines to clients further includes copying a virtual machine file to a memory location assigned to a specific client. (paragraph 0072, specifically "When a DLU starts each virtual machine in response to being instructed by the DLM 208, that virtual machine loads its appropriate operating environment..."; paragraph 0073, specifically "[T]he disk servers 216218 (sp) can store a "base" operating environment and merely store the changes introduced by each training session..."; paragraph 0074, specifically "[A] client 202 could save the results during the middle of a training session and return to an exercise in progress at some later time. In this embodiment, of course, the

disk servers would be configured to store client data in a manner that could be identified by the DLM 208 in order to correctly identify a returning user and their saved work product.")

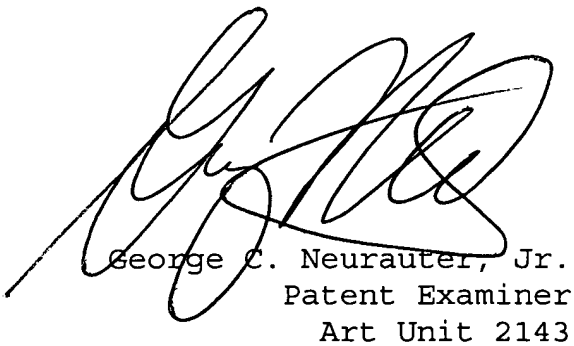
Claims 10-13 are also rejected since these claims recite a computer program product that recite substantially the same limitations as recited in claims 4-7 respectively and are therefore subject to the same motivations regarding the obviousness of these claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George C. Neurauter, Jr. whose telephone number is (571) 272-3918. The examiner can normally be reached on Monday through Friday from 9AM to 5:30PM Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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